AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-27 (Canceled)

28. (Currently Amended) Method for the production of acrylic acid from propane, in which a gaseous mixture comprising propane, molecular oxygen, water vapour, and optionally an inert gas is passed over a catalyst with the formula (I):
$Mo_lV_aTe_bNb_cSi_dO_x$ (I)

in which:

-a is ~~comprised~~ between 0.006 and 1, inclusive;

-b is ~~comprised~~ between 0.006 and 1, inclusive;

-c is ~~comprised~~ between 0.006 and 1, inclusive;

-d is ~~comprised~~ between 0 and 3.5, inclusive; and

-x is the quantity of oxygen bound to the other elements and depends on their oxidation state,

in order to oxidize the propane to acrylic acid, wherein the molar ratio propane/molecular oxygen in the initial gaseous mixture is greater than or equal to 0.5.

29. (Previously Presented) Method according to claim 28, in which the molar proportions of the constituents of the initial gaseous mixture are as follows:

propane/O_2/inert gas/H_2O (vapour) = 1/0.05-2/1-10/1-10.

30. (Previously Presented) Method according to claim 28, in which the molar proportions of the constituents of the initial gaseous mixture are as follows:

propane/O_2/inert gas/H_2O (vapour) = 1/0.1-1/1-5/1-5.

31. (Currently Amended) Method according to claim 28, in which, in the catalyst of formula (I):

-a is ~~comprised~~ between 0.09 and 0.8, inclusive;

-b is ~~comprised~~ between 0.04 and 0.6, inclusive;

-c is ~~comprised~~ between 0.01 and 0.4, inclusive; and

-d is ~~comprised~~ between 0.4 and 1.6, inclusive.

32. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out at a temperature of 200 to 500°C.

33. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out at a temperature of 250 to 450°C.

34. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out at a pressure of 1.01×10^4 to 1.01×10^6 Pa (0.1 to 10 atmospheres).

35. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out at a pressure of 5.05×10^4 to 5.05×10^5 Pa (0.5-5 atmospheres).

36. (Previously Presented) Method according to claim 28, which is used until there is a reduction ratio of the catalyst comprised between 0.1 and 10 g of oxygen per kg of catalyst.

37. (Previously Presented) Method according to claim 28, wherein once the catalyst has at least partially changed to the reduced state, its regeneration is carried out according to reaction (3):

$SOLID_{reduced} + O_2 \rightarrow SOLID_{oxidized}$ (3)

by heating in the presence of oxygen or a gas containing oxygen at a temperature of 250 to 500°C, for a period necessary for the reoxidation of the catalyst.

38. (Previously Presented) Method according to claim 37, wherein the oxidation and the regeneration (3) reactions are carried out in a device with two

stages, namely a reactor and a regenerator which operate simultaneously and in which two catalyst loads alternate periodically.

39. (Previously Presented) Method according to claim 37, wherein the oxidation and the regeneration (3) reactions are carried out in the same reactor alternating the periods of reaction and regeneration.

40. (Previously Presented) Method according to claim 37, wherein the oxidation and the regeneration (3) reactions are carried out in a reactor with a moving bed.

41. (Currently Amended) Method according to claim 28, in which:

a) the initial gaseous mixture is introduced into a first reactor with a moving catalyst bed,

b) at ~~the~~ an outlet of the first reactor, the ~~gases are~~ gaseous mixture is separated from the catalyst;

c) the catalyst is returned into a regenerator;

d) the ~~gases are~~ gaseous mixture is introduced into a second reactor with a moving catalyst bed;

e) at ~~the~~ an outlet of the second reactor, the ~~gases are~~ gaseous mixture is separated from the catalyst and ~~the~~ acrylic acid contained in the separated ~~gases~~ gaseous mixture is recovered;

f) the catalyst is returned into the regenerator; and

g) ~~the~~ regenerated catalyst from the regenerator is reintroduced into the first and second reactors.

42. (Previously Presented) Method according to claim 41, in which the first and second reactors are vertical and the catalyst is moved upwards by the gas flow.

43. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out with a residence time of 0.01 to 90 seconds in each reactor.

44. (Previously Presented) Method according to claim 28, wherein the oxidation reactions are carried out with a residence time of 0.1 to 30 seconds in each reactor.

45. (Currently Amended) Method according to claim 28, wherein ~~the~~ propylene produced or the propane which has not reacted or both are recycled to ~~the~~ an inlet of ~~the~~ a reactor, or if there are several reactors, to ~~the~~ an inlet of ~~the~~ a first reactor.

46. (Currently Amended) Method according to claim 28, in which ~~the~~ a reactor, or when there are several reactors, at least one of the reactors, also comprises a cocatalyst corresponding to the following formula (II):

$$Mo_1Bi_{a'}Fe_{b'}Co_{c'}Ni_{d'}K_{e'}Sb_{f'}Ti_{g'}Si_{h'}Ca_{1'}Nb_{j'}Te_{k'}Pb_{l'}W_{m'}Cu_{n'} \quad (II)$$

in which:

-a' is ~~comprised~~ between 0.006 and 1, inclusive
-b' is ~~comprised~~ between 0 and 3.5, inclusive;
-c' is ~~comprised~~ between 0 and 3.5, inclusive;
-d' is ~~comprised~~ between 0 and 3.5, inclusive;
-e' is ~~comprised~~ between 0 and 1, inclusive;
-f' is ~~comprised~~ between 0 and 1, inclusive;
-g' is ~~comprised~~ between 0 and 1, inclusive;
-h' is ~~comprised~~ between 0 and 3.5, inclusive;
-i' is ~~comprised~~ between 0 and 1, inclusive;
-j' is ~~comprised~~ between 0 and 1, inclusive;
-k' is ~~comprised~~ between 0 and 1, inclusive;
-l' is ~~comprised~~ between 0 and 1, inclusive;
-m' is ~~comprised~~ between 0 and 1, inclusive; and
-n' is ~~comprised~~ between 0 and 1, inclusive.

47. (Currently Amended) Method according to claim 46, in which the cocatalyst is regenerated and circulates~~, if appropriate,~~ in the same way as the catalyst.

48. (Currently Amended) Method according to claim 46, in which, in the cocatalyst of formula (II):

-a' is ~~comprised~~ between 0.01 and 0.4, inclusive;

-b' is ~~comprised~~ between 0.2 and 1.6, inclusive;

-c' is ~~comprised~~ between 0.3 and 1.6, inclusive;

-d' is ~~comprised~~ between 0.1 and 0.6, inclusive;

-e' is ~~comprised~~ between 0.006 and 0.01, inclusive;

-f' is ~~comprised~~ between 0 and 0.4, inclusive;

-g' is ~~comprised~~ between 0 and 0.4, inclusive;

-h' is ~~comprised~~ between 0.01 and 1.6, inclusive

-i' is ~~comprised~~ between 0 and 0.4, inclusive;

-j' is ~~comprised~~ between 0 and 0.4, inclusive;

-k' is ~~comprised~~ between 0 and 0.4, inclusive;

-l' is ~~comprised~~ between 0 and 0.4, inclusive;

-m' is ~~comprised~~ between 0 and 0.4, inclusive; and

-n' is ~~comprised~~ between 0 and 0.4, inclusive.

49. (Previously Presented) Method according to claim 46, in which, a weight ratio of the catalyst to the cocatalyst greater than 0.5 is used.

50. (Previously Presented) Method according to claim 46, in which, a weight ratio of the catalyst to the cocatalyst of at least 1 is used.

51. (Previously Presented) Method according to claim 46, in which the catalyst and the cocatalyst are mixed.

52. (Previously Presented) Method according to claim 46, in which the catalyst and the cocatalyst are present in the form of pellets, each pellet comprising both the catalyst and the cocatalyst.

53. (Currently Amended) Method according to claim 28, comprising ~~the~~ repetition, in a reactor provided with the catalyst of formula (I) defined in claim 28,

~~and if appropriate,~~ or the cocatalyst of formula (II) defined in claim 46, of ~~the~~ a cycle comprising the following successive stages:

1) a stage of injection of the gaseous mixture as defined in claim 28;

2) a stage of injection of water vapour ~~and, if appropriate,~~ or inert gas;

3) a stage of injection of a mixture of molecular oxygen, water vapour ~~and, if appropriate,~~ or inert gas; and

4) a stage of injection of water vapour ~~and, if appropriate,~~ or inert gas.

54. (Previously Presented) Method according to claim 53, wherein the cycle comprises an additional stage which precedes or follows stage 1) and during which a gaseous mixture corresponding to that of stage 1) but without molecular oxygen is injected, the molar ratio propane/molecular oxygen then being calculated globally for stage 1) and this additional stage.

55. (Previously Presented) Method according to claim 54, wherein the additional stage precedes stage I) in the cycle.

56. (Previously Presented) Method according to claim 54, wherein the reactor is a reactor with a moving bed.

57. (Currently Amended) Method for the production of acrylic acid from propane, in which a gaseous mixture comprising propane, molecular oxygen, water vapour, and optionally an inert gas is passed over a catalyst with the formula (I):

$Mo_l V_a Te_b Nb_c Si_d O_x$ (I)

in which:

-a is ~~comprised~~ between 0.006 and 1, inclusive;

-b is ~~comprised~~ between 0.006 and 1, inclusive;

-c is ~~comprised~~ between 0.006 and 1, inclusive;

-d is ~~comprised~~ between 0 and 3.5, inclusive; and

-x is the quantity of oxygen bound to the other elements and depends on their oxidation state,

in order to oxidize the propane to acrylic acid, wherein the molar ratio propane/molecular oxygen in the initial gaseous mixture is greater than or equal to 0.5, and in which

a) the initial gaseous mixture is introduced into a first reactor with a moving catalyst bed,

b) at the outlet of the first reactor, the gases are separated from the catalyst;

c) the catalyst is returned into a regenerator;

d) the gases are introduced into a second reactor with a moving catalyst bed;

e) at the outlet of the second reactor, the gases are separated from the catalyst and the acrylic acid contained in the separated gases is recovered;

f) the catalyst is returned into the regenerator; and

g) the regenerated catalyst from the regenerator is reintroduced into the first and second reactors.

58. (Previously Presented) Method according to claim 57, in which the molar proportions of the constituents of the initial gaseous mixture are as follows:

propane/O_2/inert gas/H_2O (vapour) = 1/0.05-2/1-10/1-10.

59. (Currently Amended) Method according to claim 57, in which, in the catalyst of formula (I):

-a is ~~comprised~~ between 0.09 and 0.8, inclusive;

-b is ~~comprised~~ between 0.04 and 0.6, inclusive;

-c is ~~comprised~~ between 0.01 and 0.4, inclusive; and

-d is ~~comprised~~ between 0.4 and 1.6, inclusive.

60. (Currently Amended) Method for the production of acrylic acid from propane, in which a gaseous mixture comprising propane, molecular oxygen, water vapour, and optionally an inert gas is passed over a catalyst with ~~the~~ formula (I):

$Mo_1V_aTe_bNb_cSi_dO_x$ (I)

in which:

-a is ~~comprised~~ between 0.006 and 1, inclusive;

-b is ~~comprised~~ between 0.006 and 1, inclusive;

-c is ~~comprised~~ between 0.006 and 1, inclusive;

-d is ~~comprised~~ between 0 and 3.5, inclusive; and

-x is the quantity of oxygen bound to the other elements and depends on their oxidation state,

in order to oxidize the propane to acrylic acid, wherein the molar ratio propane/molecular oxygen in the initial gaseous mixture is greater than or equal to 0.5,

comprising ~~the~~ repetition, in a reactor provided with the catalyst of formula (I) defined above, of ~~the~~ a cycle comprising the following successive stages:

1) a stage of injection of the gaseous mixture as defined above;

2) a stage of injection of water vapour ~~and, if appropriate,~~ or inert gas;

3) a stage of injection of a mixture of molecular oxygen, water vapour ~~and, if appropriate,~~ or inert gas; and

4) a stage of injection of water vapour ~~and, if appropriate,~~ or inert gas.

61. (Currently Amended) Method according to claim 60, in which, in the catalyst of formula (I):

-a is ~~comprised~~ between 0.09 and 0.8, inclusive;

-b is ~~comprised~~ between 0.04 and 0.6, inclusive;

-c is ~~comprised~~ between 0.01 and 0.4, inclusive; and

-d is ~~comprised~~ between 0.4 and 1.6, inclusive.

62. (Previously Presented) Method according to claim 60, wherein the cycle comprises an additional stage which precedes or follows stage 1) and during which a gaseous mixture corresponding to that of stage 1) but without molecular oxygen is injected, the molar ratio propane/molecular oxygen then being calculated globally for stage 1) and this additional stage.

63. (Previously Presented) Method according to claim 62, wherein the additional stage precedes stage I) in the cycle.

STATEMENT CONCERNING COMMON OWNERSHIP:

Application 10/526,877 (the present application) and application 10/093,265, Dubois (USP App Pub No 2003/0088124), were, at the time the invention of Application 10/526,877 was made, owned by the same company, Atofina, which has changed its name to Arkema.